SUPPLEMENTARY DATA

Supplementary Table 1. Multiple logistic regression analyses of the cross-sectional association between baseline 25(OH)D status and diabetes prevalence.

25(OH)D* status	Diabetes prevalence ‡	Risk of prevalent diabetes, OR (95%CI)		
nmol/l	% (n/n_{total})	crude	Adjusted (1) ‡	Adjusted (2)
<25	14.7 (125/849)	2.15 (1.59;2.91)	2.12 (1.53;2.93)	1.96 (1.35;2.86)
≥ 25-50	11.4 (269/2358))	1.60 (1.23;2.09)	1.50 (1.13;2.00)	1.59 (1.14;2.21)
≥ 50-75	9.2 (178/1931)	1.26 (0.95;1.67)	1.28 (0.95;1.72)	1.30 (0.92;1.83)
≥ 75	7.4 (75/1008)	1.00 (reference)	1.00 (reference)	1.00 (reference)
	P<0.001	P_{trend}<0.001	P_{trend}<0.001	P_{trend}<0.001
Per 10 nmol/l increase		0.91 (0.88;0.94)	0.92 (0.88;0.95)	0.92 (0.88;0.96)
		P<0.001	P<0.001	P<0.001

* Abbreviations: 25(OH)D, 25-hydroxy-vitamin-D; OR, odds ratio; CI, confidence interval.
† Prevalent diabetes at baseline was defined as having diabetes according to OGTT criteria (fasting plasma glucose ≥7.0, 2-hour plasma glucose ≥11.1 mmol/l), HbA1c criteria (HbA1c ≥6.5%), self-reported history of diabetes, and/or use of diabetes medication.
‡ Models were adjusted for (1) season of blood collection, sex, age, family history of diabetes, and BMI; (2) plus leisure time physical activity, dietary habits, alcohol consumption, smoking status, total energy intake, and social class.

Supplementary Table 2. Subgroup analyses of the association between baseline serum 25(OH)D and risk of prevalent and 5 year incident diabetes.

Potential confounders	Subgroups	Risk of incident diabetes *	
		OR (95% CI) per 10 nmol/l increase in 25(OH)D †,††	
Sex	Men	0.96 (0.87;1.05)	
	women	0.90 (0.80;1.01)	$P_{interaction}$=0.44
Age	30-45	0.89 (0.78;1.00)	
	50-60	0.96 (0.87;1.05)	$P_{interaction}$=0.27
Season	April-September	0.95 (0.88;1.04)	
	October-March	0.82 (0.70;0.96)	$P_{interaction}$=0.082
BMI	<25 kg/m2	0.90 (0.77;1.06)	
	≥ 25 kg/m2	0.92 (0.85;1.01)	$P_{interaction}$=0.72
Social class	Lower (1-3)	1.04 (0.91;1.18)	
	Higher (4-5)	0.90 (0.82;0.98)	$P_{interaction}$=0.080
Family history of diabetes	No	0.96 (0.88;1.05)	
	Yes	0.86 (0.74;0.99)	$P_{interaction}$=0.18
Dietary habits	Healthy	0.93 (0.85;1.01)	
	less healthy	0.88 (0.72;1.08)	$P_{interaction}$=0.62
Total energy intake	< median	0.91 (0.81;1.02)	
	≥ median	0.94 (0.85;1.04)	$P_{interaction}$=0.66
Physical activity	Sedentary	0.98 (0.82;1.17)	
	Non-sedentary	0.93 (0.86;1.02)	$P_{interaction}$=0.63
Smoking status	Non-smoker	0.96 (0.88;1.05)	
	Smoker	0.89 (0.77;1.02)	$P_{interaction}$=0.33
Alcohol consumption	≤ 14 drinks/week	0.93 (0.85;1.02)	
	>14 drinks/week	0.91 (0.79;1.06)	$P_{interaction}$=0.77
Randomisation group	Low intensity intervention	0.86 (0.70;1.06)	
	High intensity intervention	0.95 (0.87;1.03)	$P_{interaction}$=0.39

* incident diabetes was defined as having diabetes according to OGTT criteria, HbA1c criteria, a known history of diabetes, and/or use of diabetes medication among those without diabetes at baseline.
† Abbreviations: 25(OH)D, 25-hydroxy-vitamin-D; OR, odds ratio; CI, confidence interval; OGTT, oral glucose tolerance test; HbA1c, glycosylated haemoglobin.
†† Models were adjusted for season of blood collection , sex, age, family history of diabetes, BMI, change in weight during follow-up, leisure time physical activity, dietary habits, alcohol consumption, smoking status, total energy intake, social class, randomisation group, and self-reported changes in dietary habits, physical activity, smoking status, and alcohol consumption during follow-up.

SUPPLEMENTARY DATA

Supplementary Table 3. Multiple logistic regression analyses of the prospective association between baseline 25(OH)D status and 5 year diabetes incidence.

Diabetes outcome	25(OH)D* status	Diabetes incidence	Risk of incident diabetes (OR (95% CI))			
	nmol/l	% (n/n_{total})†	crude	Adjusted (1) ‡	Adjusted (2)	Adjusted (3)
OGTT criteria§	<25	5.5 (27/491)	2.87 (1.46;5.62)	2.51 (1.24;5.05)	2.59 (1.19;5.66)	2.49 (1.09;5.71)
	≥ 25-50	3.8 (54/1408)	1.97 (1.07;3.63)	1.75 (0.92;3.30)	1.76 (0.87;3.56)	1.79 (0.85;3.76)
	≥ 50-75	3.2 (38/1193)	1.62 (0.86;3.07)	1.63 (0.85;3.15)	1.94 (0.95;3.97)	1.83 (0.86;3.90)
	≥ 75	2.0 (13/654)	1.00 (reference)	1.00 (reference)	1.00 (reference)	1.00 (reference)
		P=0.012	P_{trend}=0.001	P_{trend}=0.013	P_{trend}=0.047	P_{trend}=0.058
	Per 10 nmol/l increase		0.89 (0.83;0.96)	0.92 (0.85;0.99)	0.92 (0.85;1.01)	0.92 (0.84;1.01)
			P=0.002	P=0.023	P=0.065	P=0.080
HbA1c criteria	<25	3.5 (17/486)	1.61 (0.79;3.25)	1.35 (0.65;2.80)	1.48 (0.66;3.33)	1.36 (0.57;3.27)
	≥ 25-50	3.7 (53/1444)	1.69 (0.95;3.02)	1.49 (0.81;2.74)	1.38 (0.70;2.71)	1.46 (0.72;2.97)
	≥ 50-75	2.4 (29/1223)	1.08 (0.57;2.02)	1.04 (0.55;2.00)	1.09 (0.54;2.23)	1.00 (0.47;2.16)
	≥ 75	2.2 (15(680)	1.00 (reference)	1.00 (reference)	1.00 (reference)	1.00 (reference)
		P=0.12	P_{trend}=0.036	P_{trend}=0.17	P_{trend}=0.23	P_{trend}=0.23
	Per 10 nmol/l increase		0.93 (0.86;1.00)	0.95 (0.88;1.03)	0.95 (0.87;1.04)	0.95 (0.87;1.05)
			P=0.045	P=0.23	P=0.27	P=0.33

*Abbreviations: 25(OH)D, 25-hydroxy-vitamin-D;OGTT, oral glucose tolerance test; HbA1c, glycosylated haemoglobin; OR, odds ratio; CI, confidence interval.

† N_{total} in 25(OH)D subgroups may differ due to missing information on OGTT or HbA1c.

‡ Models were adjusted for (1) season of blood collection , sex, age, family history of diabetes, BMI, and change in weight during follow-up; (2) plus leisure time physical activity, dietary habits, alcohol consumption, smoking status, total energy intake, and social class; (3) plus randomisation group, and self-reported changes in dietary habits, physical activity, smoking status, and alcohol consumption during follow-up.

§ Incident diabetes according to OGTT criteria was defined as fasting plasma glucose ≥7.0, 2-hour plasma glucose ≥11.1 mmol/l, self-reported development of diabetes during follow-up, or use of diabetes medication among those without diabetes according to OGTT criteria at baseline. Incident diabetes according to HbA1c criteria was defined as HbA1c ≥6.5% self-reported development of diabetes during follow-up, or use of diabetes medication among those without diabetes according to HbA1c criteria at baseline.